For Reference

TEST DATA OF TECS45F-5

Regulated DC Power Supply
October.3. 2023

Approved by : Satoshi Uetani
Design Manager

Prepared by : Riku Nishimura
Design Engineer

COSEL CO.,LTD.

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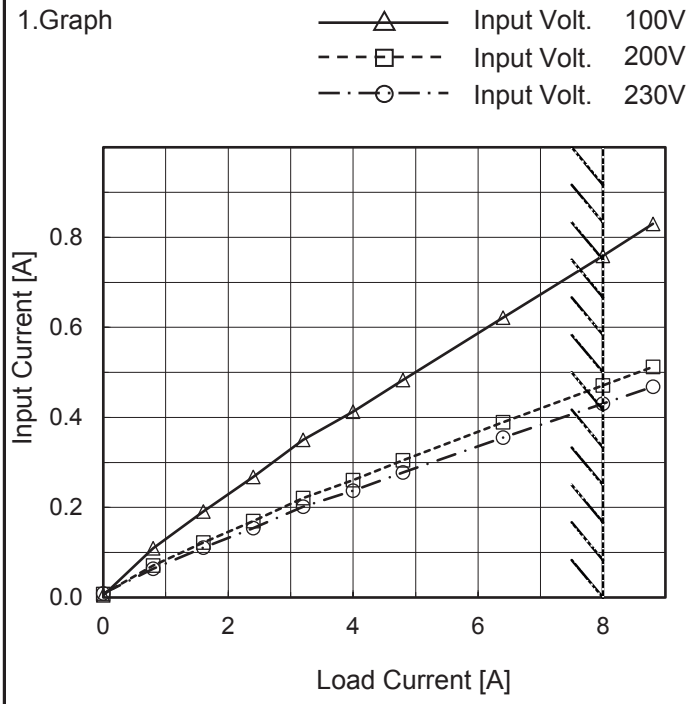
Model	TECS45F-5
Item	Input Current (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.005	0.008	0.009
0.8	0.110	0.071	0.064
1.6	0.191	0.122	0.111
2.4	0.268	0.170	0.154
3.2	0.350	0.221	0.202
4.0	0.413	0.261	0.238
4.8	0.483	0.305	0.278
6.4	0.622	0.389	0.355
8.0	0.759	0.471	0.430
8.8	0.830	0.512	0.468
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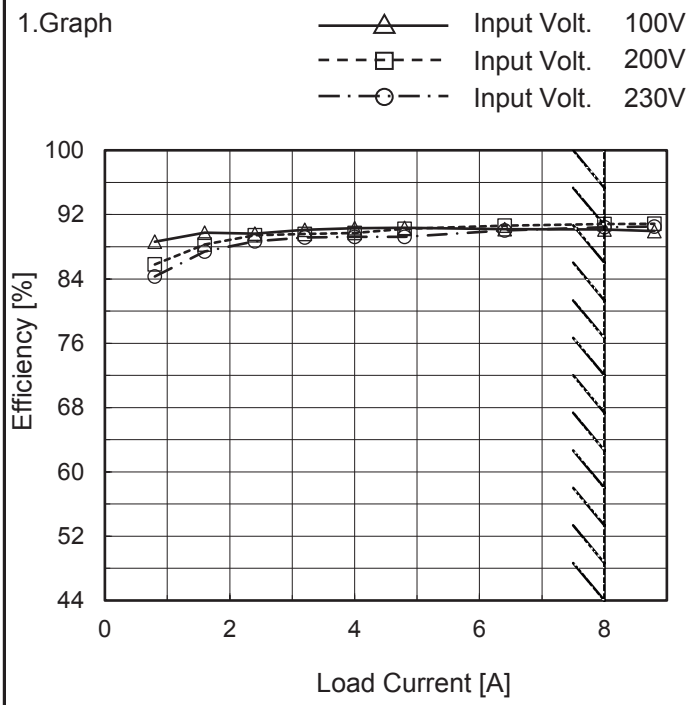
Model	TECS45F-5
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
0.8	88.6	85.8	84.3
1.6	89.8	88.3	87.4
2.4	89.6	89.4	88.7
3.2	90.1	89.6	89.1
4.0	90.3	89.7	89.2
4.8	90.4	90.2	89.2
6.4	90.2	90.6	90.0
8.0	90.2	90.8	90.4
8.8	89.9	90.9	90.5
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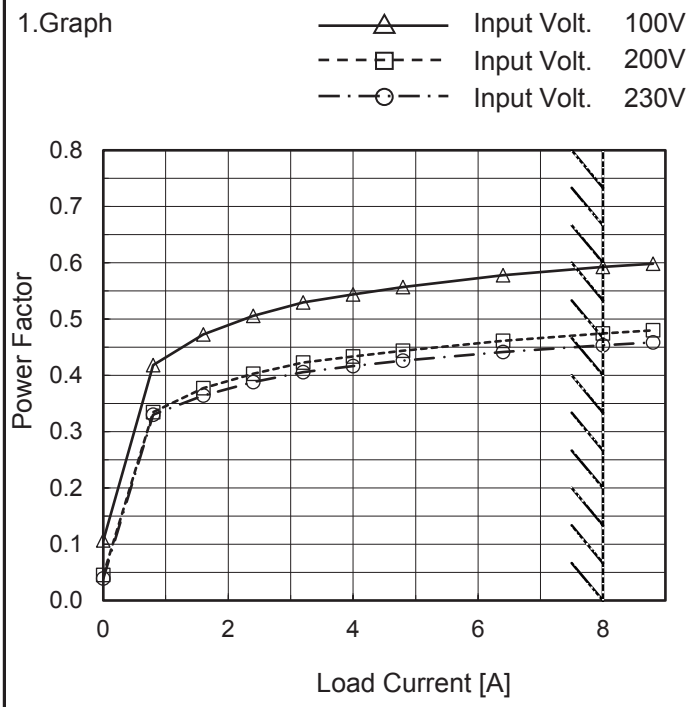
Model	TECS45F-5
Item	Power Factor (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Power Factor		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.107	0.045	0.039
0.8	0.418	0.335	0.330
1.6	0.473	0.378	0.364
2.4	0.506	0.403	0.388
3.2	0.529	0.423	0.406
4.0	0.544	0.434	0.417
4.8	0.557	0.444	0.426
6.4	0.578	0.461	0.441
8.0	0.593	0.475	0.454
8.8	0.598	0.480	0.459
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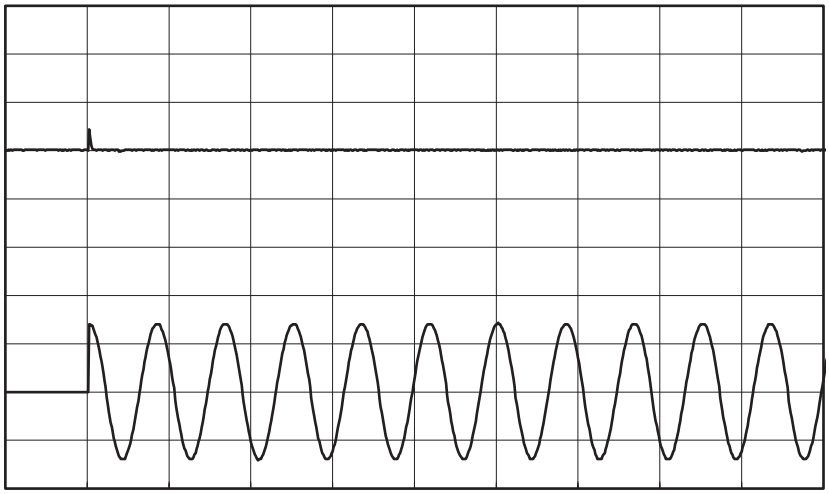
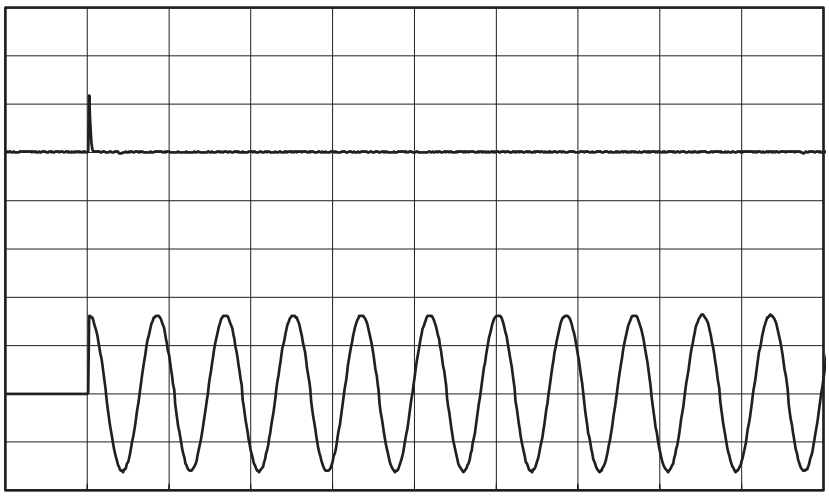
Model	TECS45F-5
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



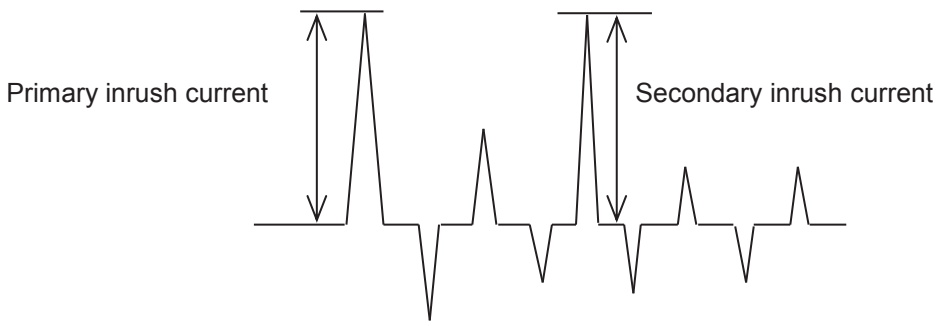
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
21.9 A
Secondary inrush current :
2.9 A



Input Voltage 230 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
58.9 A
Secondary inrush current :
1.9 A



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Model	TECS45F-5	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure C
Object	———————————	

1.Results

[mA]

Standards	Testing Circuitry	Measuring Method	Input Volt.			Note
			100 [V]	230 [V]	264 [V]	
DEN-AN	Figure C-1	Both phases	0.04	0.08	0.09	Operation
		One of phases	0.05	0.12	0.14	Stand by
IEC62368-1	Figure C-2	Both phases	0.03	0.08	0.09	Operation
		One of phases	0.05	0.12	0.14	Stand by
	Figure C-3	Both phases	0.03	0.08	0.09	Operation
		One of phases	0.05	0.12	0.13	Stand by

The value for "One of phases" is the reference value only.

2.Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

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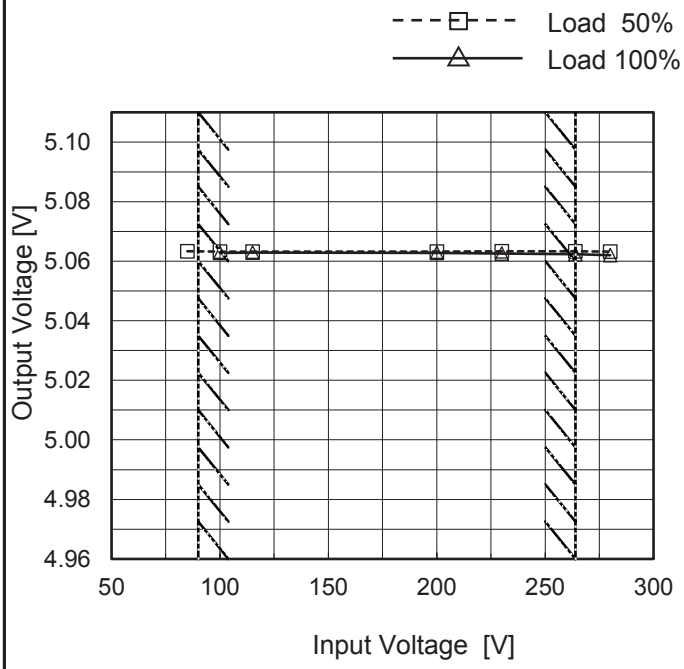
Model	TECS45F-5
Item	Line Regulation
Object	+5V8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	5.063	-
100	5.063	5.063
115	5.063	5.063
200	5.063	5.063
230	5.063	5.063
264	5.063	5.062
280	5.063	5.062
--	-	-
--	-	-

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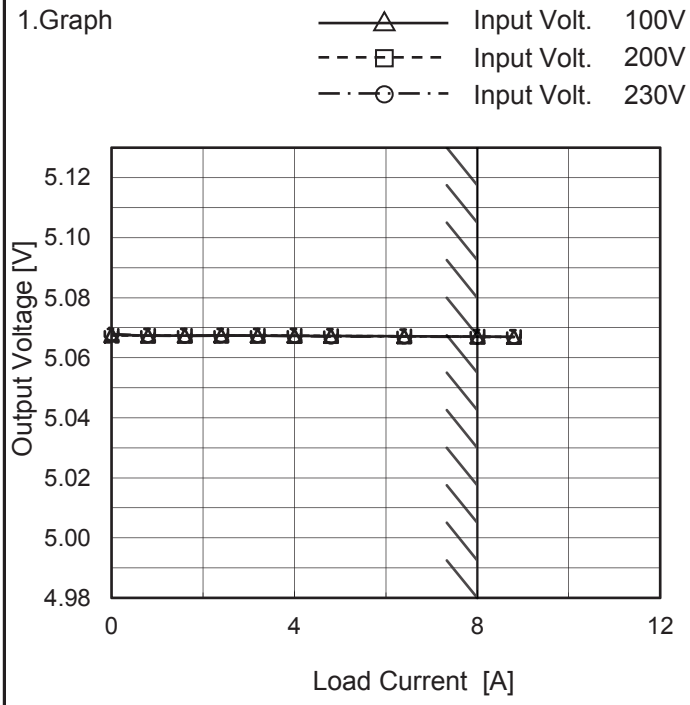
Model	TECS45F-5
Item	Load Regulation
Object	+5V8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	5.068	5.067	5.068
0.8	5.067	5.067	5.067
1.6	5.067	5.067	5.067
2.4	5.068	5.067	5.067
3.2	5.067	5.067	5.067
4.0	5.067	5.067	5.067
4.8	5.067	5.067	5.067
6.4	5.067	5.067	5.067
8.0	5.067	5.067	5.067
8.8	5.067	5.067	5.067
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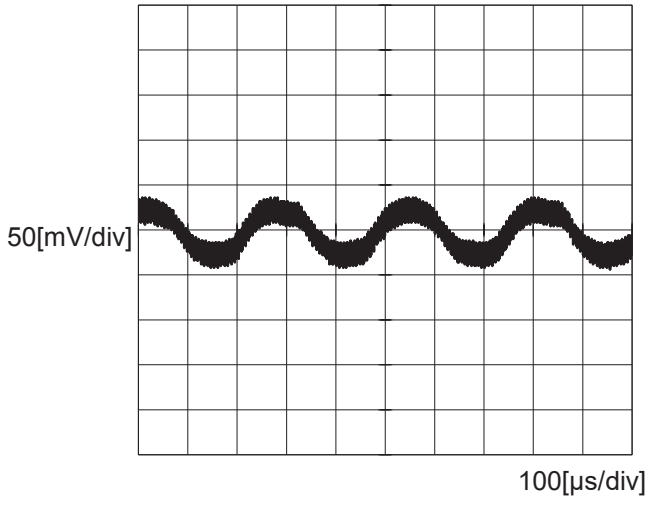
Item	Ripple-Noise
Object	+5V8A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

Input Voltage 230V
Load 100%



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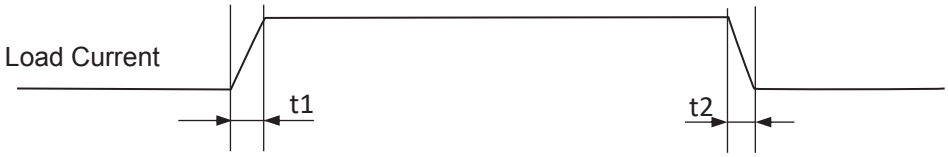
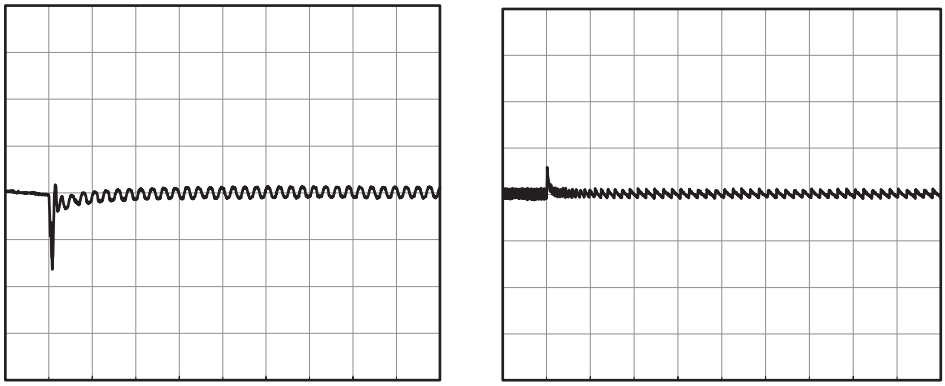
Model	TECS45F-5	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	+5V8A	

Input Volt. 230 V
Cycle 1000 ms

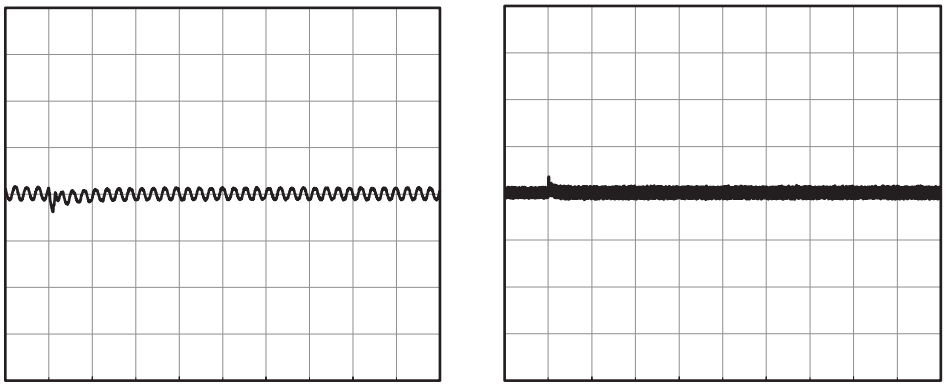
Response. t1=t2=50µs. Typ



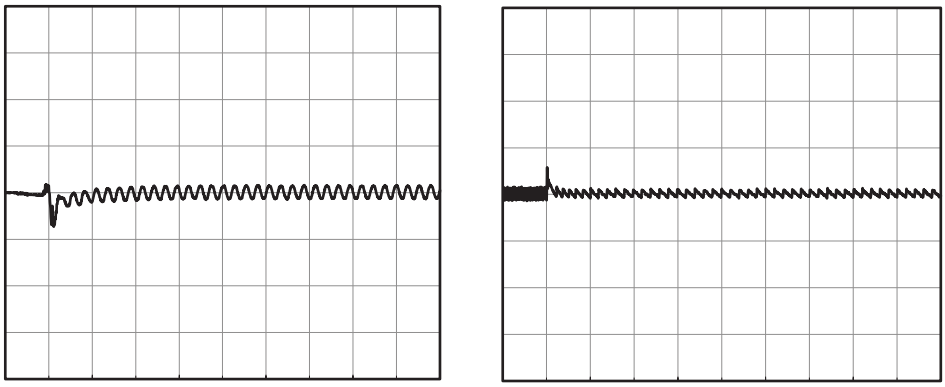
Load 0%(0A) ←→
Load 100%(8A)



Load 50%(4A) ←→
Load 100%(8A)



Load 0%(0A) ←→
Load 50%(4A)



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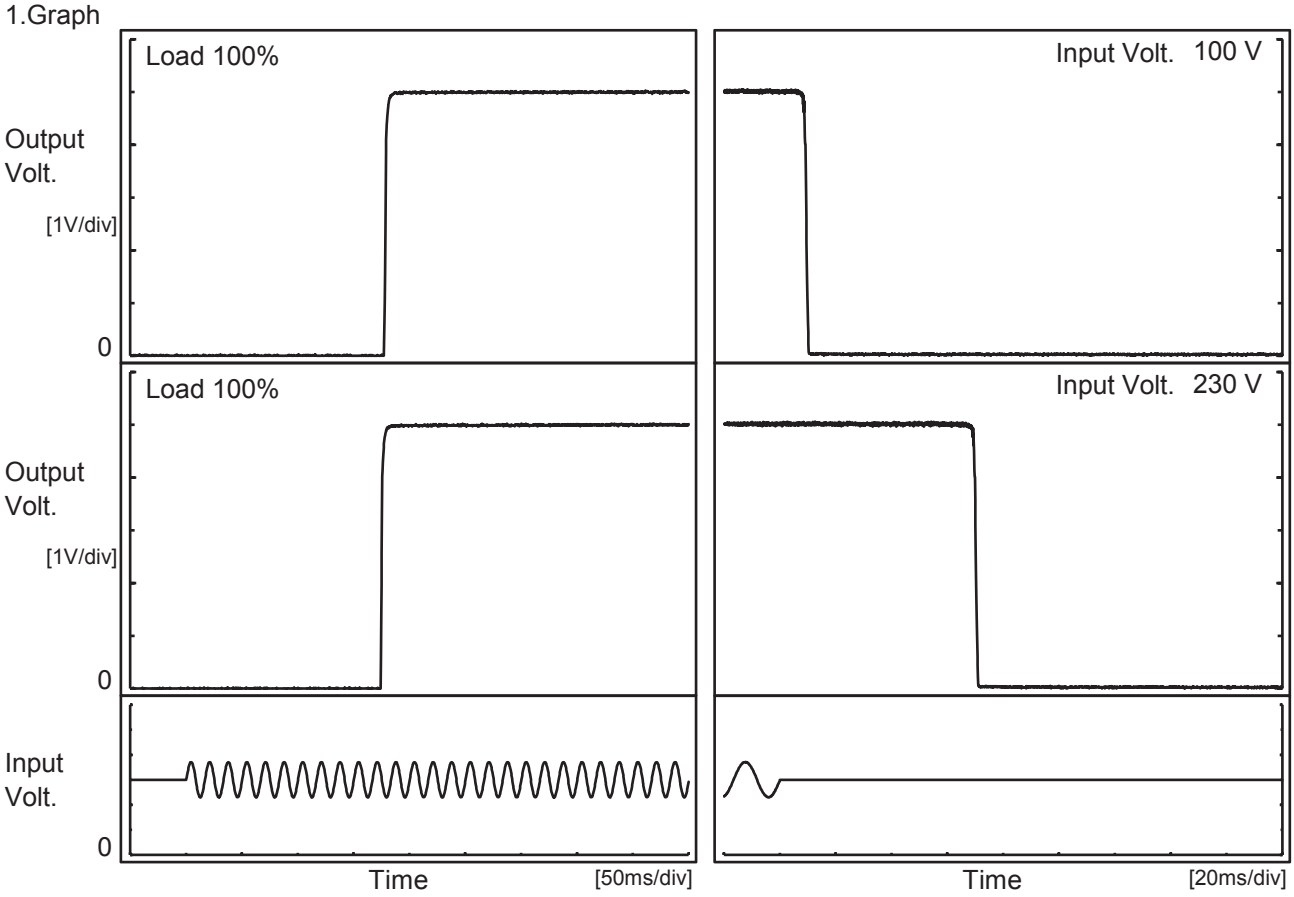
Model	TECS45F-5	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+5V8A	

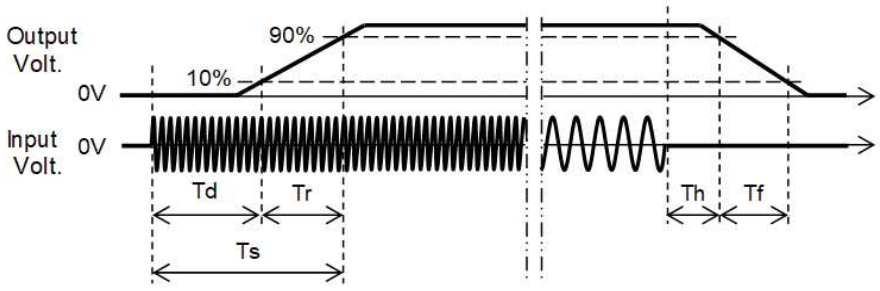
1.Graph



2.Values

[ms]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	177.8	2.5	180.3	8.9	1.3
230 V	174.5	2.5	177.0	69.8	1.1



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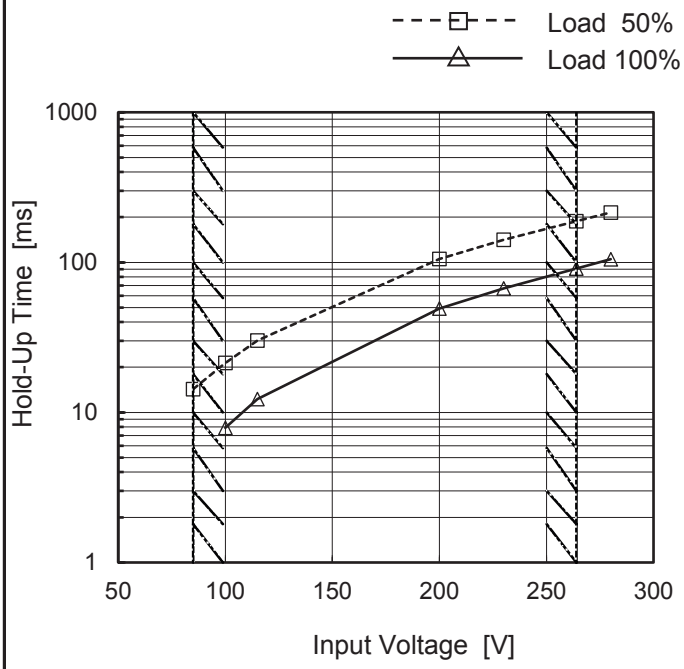
Model	TECS45F-5
Item	Hold-Up Time
Object	+5V8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	14	-
100	21	8
115	30	12
200	105	49
230	142	67
264	188	91
280	215	105
--	-	-
--	-	-

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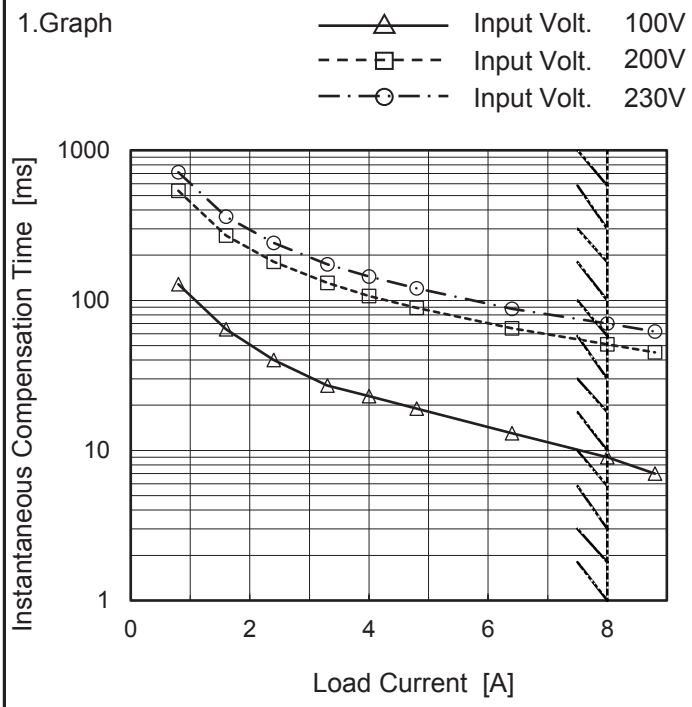
Model	TECS45F-5
Item	Instantaneous Interruption Compensation
Object	+5V8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Time [ms]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
0.8	128	537	714
1.6	64	270	361
2.4	40	181	241
3.3	27	131	174
4.0	23	107	144
4.8	19	89	120
6.4	13	65	88
8.0	9	51	70
8.8	7	45	62
--	-	-	-

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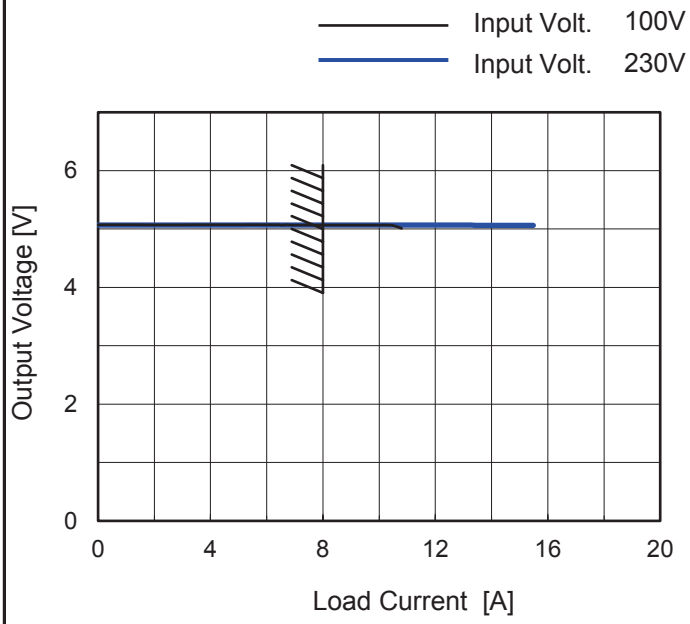
Model	TECS45F-5
Item	Overcurrent Protection
Object	+5V8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

Overcurrent protection is Hiccup mode.

2.Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 230[V]
5.00	10.80	15.49
4.75	-	-
4.50	-	-
4.00	-	-
3.50	-	-
3.00	-	-
2.50	-	-
2.00	-	-
1.50	-	-
1.00	-	-
0.50	-	-
0.00	-	-

Model	TECS45F-5	
Item	Ambient Temperature Drift	Testing Circuitry Figure A
Object	+5V8A	

1.Values

Load 100%

Ambient Temperature[℃]	Output Voltage [V]		
	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V
-10	5.081	5.081	5.081
25	5.068	5.067	5.067
50	5.055	5.055	5.054

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+5V8A	

1.Values

Ambient Temperature[℃]	Input Voltage [V]	
	Load 50%	Load 100%
-10	61	62
25	62	62
50	61	62

Item	Overvoltage Protection	Testing Circuitry Figure A
Object	+5V8A	

1.Values

Load 0%

Ambient Temperature[℃]	Operating Point [V]	
	Input Volt. 100V	Input Volt. 230V
-10	5.71	5.71
25	5.71	5.71
50	5.71	5.71

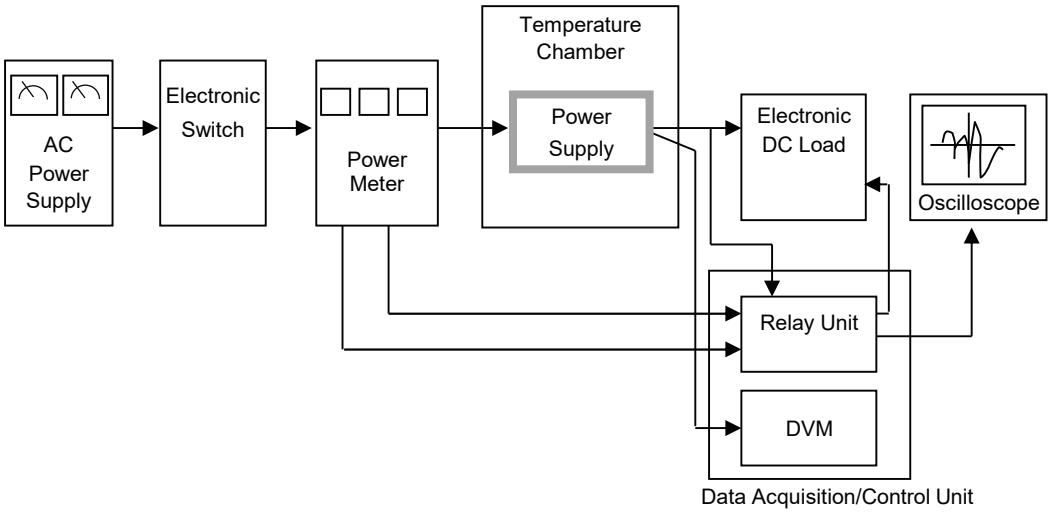


Figure A

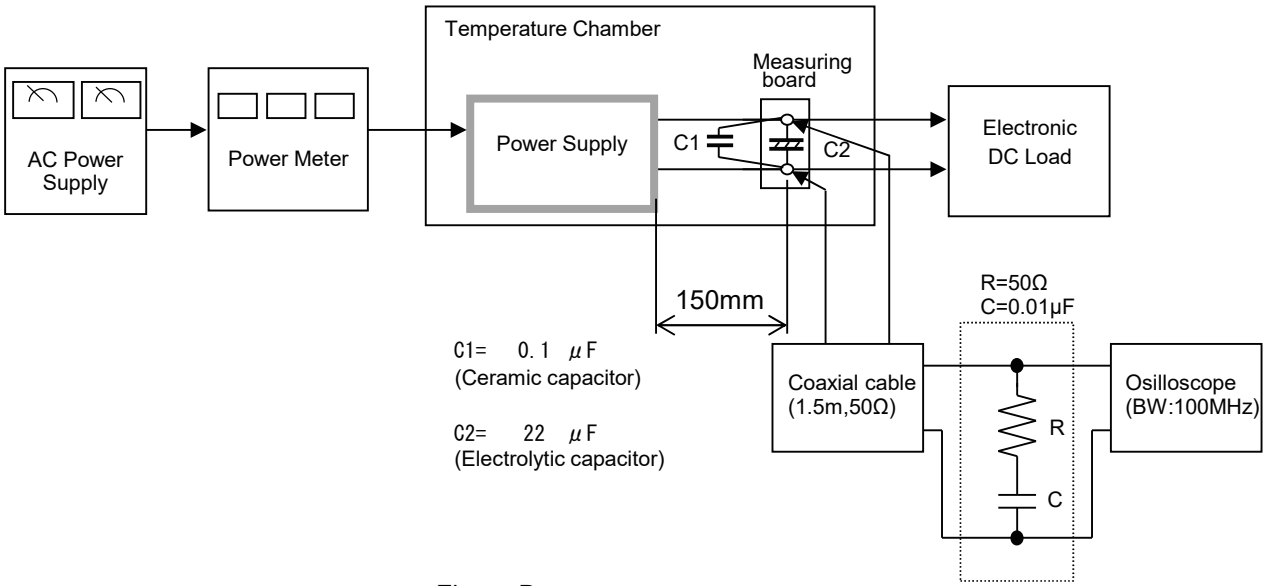


Figure B

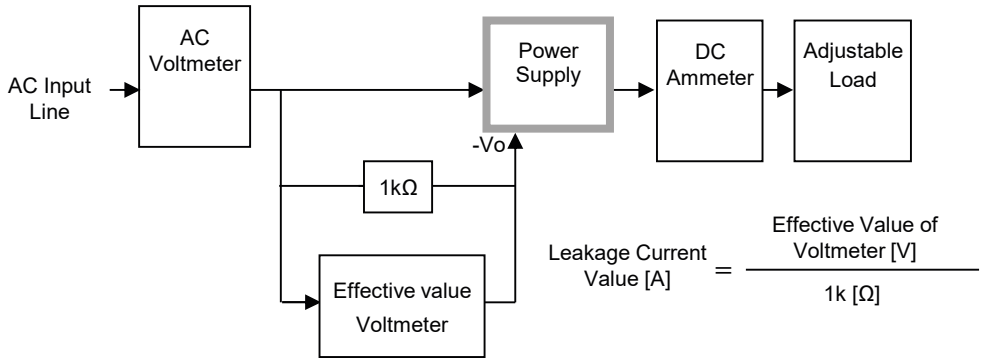


Figure C-1 (DEN-AN)

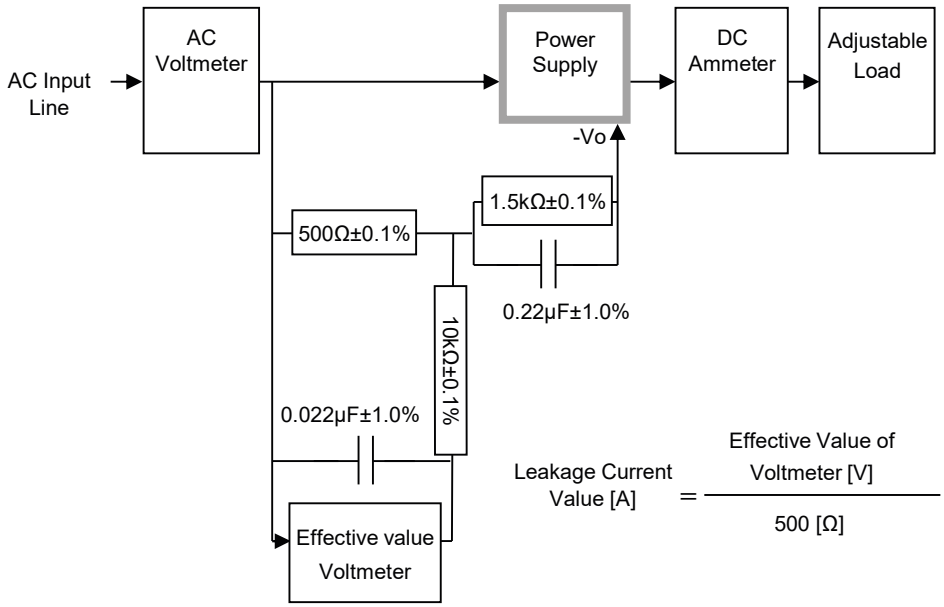


Figure C-2 (IEC62368-1 refer to IEC60990 Fig.4)

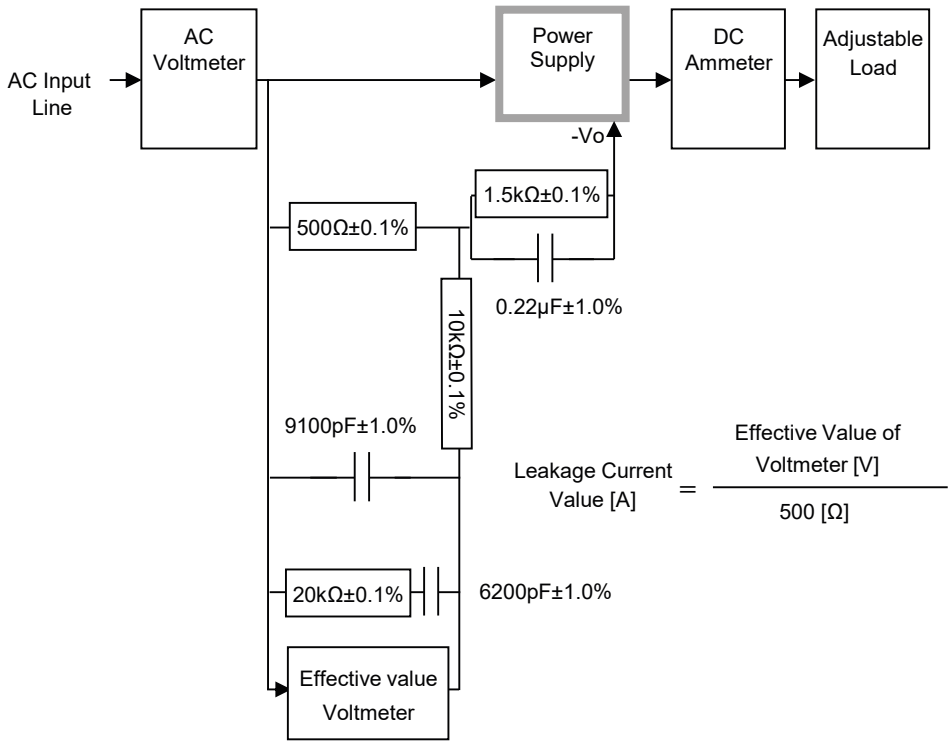


Figure C-3 (IEC62368-1 refer to IEC60990 Fig.5)